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University of Toronto

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Janet Campbell, Editor

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THE NEW RJE EQUIPMENT

The cover photo of this month's COMPUTERNEWS features the new Remote Job Entry (RJE) terminal hardware installed at the Erindale and Scarborough campuses. The Scarborough terminal became operational with the new equipment in July (see July '77 COMPUTERNEWS) and by the second week of August, the new Erindale equipment was also operational.

The system configuration was the recommendation of the UTCC Computer Research Facility (CRF) who also tested and installed the new equipment. At both remotes, the nucleus of the system is a PDP 11/10. A console is used to enter HASP and LOCAL commands and to control the flow of HASP jobs. Both remotes have two card readers and line printers. The card readers are the DOCUMATION model by Ashworth Automation with a speed of 600 cards per minute and OMR (Optical Marksense Recognition) capabilites. The line printers are TELETYPE 40's with an output rate of 300 lines per minute. At each remote, one of the line printers can be set from the console for upper and lower case printing. In addition, the Erindale remote supports an on-line UNIVAC card punch.

The system software was written by CRF. They are also responsible for the maintenance of the PDP 11/10 and the card readers. The line printers are serviced by the manufacturer. All the new equipment was purchased outright by UTCC.

A potential irritant of the new system is the inability of the card readers to sense end of file (EOF). Currently, for the HSJS, EOF is designated by a card with nothing but '//' punched in columns 1 and 2. Unfortunately, this does not make a job portable because users would have to know how EOF was transmitted at each remote. CRF is examining the situation to determine if hardware and/or software modifications can rectify this problem.

For the line printers, it is relatively straightforward to set the carriage control to 8 lines per inch and thus achieve some savings in paper costs. However, the size of the characters on the print train causes slight line-overlap, making output difficult to read. A suitable print train is not available from the manufacturer at this time.

Any questions about the new RJE equipment should be directed to Clem DiPlacido at Erindale (828-5311) or Ihor Prociuk at Scarborough (284-3173).

Ihor Prociuk

MVS TESTING

To assist UTCC in the development of an MVS system for the S/370-165-II that is compatible with MVT, reliable and tuned to our requirements, we have scheduled a number of free, user tests on Friday evenings. During these tests, components of the system have been gradually added. This method has allowed us to conduct a controlled test in a "REAL" environment and has made it possible to add components as they become ready for extensive testing.

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MVS TESTING cont'd

It also prevents us from becoming overwhelmed with problems which sometimes tend to mask one another.

At the time of writing, we have conducted three tests. The first test on July 22 provided users with Class = A and some HSJS processors from the Sandford Fleming Terminal and EUT. Class = B, other HSJS processors, TSO and a few remote terminals were added for the second test on August 5. The third test on August 12 included Calcomp and WYLBUR and allowed us to test some initial tuning parameters.

During the third test we ran 481 GPJS jobs, 798 HSJS jobs and 69 TSO sessions for a total of 346 minutes of CPU time. We did not, however, have any Calcomp users. We identified 18 new problems pf which 6 were fixed during the test.

We still have much to do before we have a complete system, particularly in the areas of accounting, Gould and hardware error recovery. The tests, so far, have had a good user turnout with a moderate to heavy load and have been very productive for Systems Development and Assurance.

We thank our users who have assisted us in these tests and invite our other users to stop in on these Friday nights and have some free coffee and computing. Watch HOTNEWS and the signs posted at the terminal for dates, times and services.

John Chapman

A REVIEW OF SUMMER CHANGES AT UTCC

Some of the major changes and events that occurred during the past summer and affect computing are summarized below for our readers.

1. Move of Sandford Fleming Terminal to Engineering Annex.

   Initial plans called for the Sandford Fleming Terminal to be moved to the Engineering Annex Building by the fall term. However, delays in preparation of the Annex site have delayed this move and as a result the move will be completed in the fall term.

2. New Tape Drives for S/370-165-II.

   In July, UTCC implemented a new tape drive configuration on the S/370-165-II. The table below summarizes the new configuration.

UNIT	TRACKS	DENSITIES
IBM 3420	9	1600/6250 BPI
IBM 3420	9	1600/6250 BPI
IBM 3420	9	1600/6250 BPI
IBM 3420	9	1600/6250 BPI
IBM 2401	9	800 BPI
IBM 2401	9	800 BPI
IBM 2402	7	200/556/800 BPI
IBM 2402	7	200/556/800 BPI

3. WYLBUR Installed on S/370-165-II

   WYLBUR, a system which provides text editing and job entry/output services through low speed terminals was installed on the S/370-165-II in May. WYLBUR is intended as a replacement for the TSO editor and the various job entry/output services offered by UTCC.

cont'd...

A REVIEW OF SUMMER cont'd

4. MVS Phased Implementation

The testing and implementation of MVS as the production operating system is proceeding in a phased manner. This phased implementation plan has been designed so that our user community can get accustomed to the operating system. It also provides a schedule which allows all components of user software to be validated under the new system. Should any problems be uncovered, there is adequate time to investigate problems and resolve them in the earlier phases. The latter phases will afford UTCC a chance to monitor the system as the September load increases and allow our staff to tune the system as necessary. This phased implementation plan is completely different from our previous MVS installation attempt. It is based on our recognition that no matter how thoroughly the benchmark and validation testing is done, it is still a laboratory situation and full production-level loads will be required to thoroughly exercise the system.

5. Regional Computing Centre Report

The Task Force on the Toronto Universities Computing Centre Consolidation has been studying the feasibility of establishing a Regional Computing Centre to serve the needs of Ryerson, Toronto and York Universities. The Task Force has completed its study and has put forth the following recommendation:

The Task Force recommends the formation of a Joint Regional Centre with an AMDAHL 460/V7, a DEC 1090 and an IBM S/370-165-II. The major advantages of the Joint Centre would be:

"- the accessibility to one of the largest computers on the market

- the improved flexibility to meet future growth and changing user requirements
- the availability of a separate machine to process administrative work and
- the opportunity to operate from properly equipped premises

We have examined the technical and operational factors and satisfied ourselves that the Regional Centre can be implemented and be made a viable operation."

The Regional Centre would be established as a non-profit corporation governed by a Board of Directors appointed by the three participating institutions. It is proposed that the Regional Centre would operate from leased premises which would be properly equipped for housing computer equipment.

Copies of the report are available at UTCC terminal locations and at the Information Office.

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A REVIEW OF SUMMER cont'd

6. Announcement of Removal of APL/SV Service

   UTCC announced the decision to remove the APL/SV product from service on the S/370-165-II. This was a difficult decision to reach; however, it has been very clear for many months that APL/SV does not have a viable future either functionally of financially as we have implemented it on the S/370-165-II.

   No final production date will be announced until the full impact of conversion is established. UTCC will contact all APL/SV users directly and arrange for the migration of their work to another service currently offered by UTCC. When all users have been successfully removed, the service will be discontinued.

   A letter describing the details of our assistance in converting users from APL/SV has gone out to all users. As of July 15, 1977, no new APL/SV accounts will be opened for users unless the user can justify the necessity of the account for use in conversion or for use in conversion or for a special project of very short duration.

7. Replacement of the IBM S/370-155-II

   The IBM S/370-155-II, which has performed the bulk of the administrative computing at the University of Toronto since 1972, has been powered down for the last time at UTCC. The 155 was sold to make way for an IBM S/370-158-3 which was installed over the July 1st long weekend.

   The 158 installed is a 4.0 Megabyte S/370-158-3. The 60-80% increase in CPU speed over the 155 should meet the University's administrative computing requirements for the next 18-24 months. The 167% increase in main memory will alleviate the memory shortage on the 155.

8. Time-Sharing System

   The Advisory Committee on Computer Facilities and Services recommended that the University of Toronto Computer Centre acquire a Digital Equipment Corporation (DEC) System 1060 to provide interactive computing services for our user community. This recommendation has received approval from the University Administration and the Computer Centre finalized the necessary contractual agreements with Digital.

Stan Yagi

USER FORUMS

Several major events have occurred at UTCC this past summer. Now that holidays are over and most of our users are returning to their regular schedules, we thought it would be a good time to hold a User Forum to discuss some of the changes which have already taken place or have been planned for the near future. Some of the topics proposed for discussion are: the MVS implementation; the Regional Computing Centre proposal; the DEC 1060 and accompanying changes to the SFT Terminal; equipment changes at Erindale, Scarborough, New Physics and Arts and Science Terminals; and the Future of High Speed Job Stream.

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USER FORUMS cont'd

Both new and old users should find these sessions informative. If you are new to UTCC it will also provide you with an opportunity to meet members of the User Services staff.

The Forums will be held at several terminal locations in order to make them readily accessible to all users and to provide the users with an opportunity to discuss what they would like to see done in the terminal they use.

We expect to hold the Forums about the third week of September. For further details on times and locations, watch HOTNEWS and signs posted at all UTCC Terminals.

Don Gibson

UTCC ORIENTATION SESSIONS

In past years, UTCC staff have given orientation talks on computing at UTCC to new students. These discussions include information on the services and facilities available at UTCC with emphasis on High Speed computing and the operation of the self-service equipment.

Instructors wishing to arrange an orientation session for a class are invited to contact Mr. Don Gibson in the Engineering Annex room 206, phone 978-5568.

Don Gibson

DEC SYSTEM 1060 NEWS

The DEC 1060 computer has arrived at UTCC. However, since the Engineering Annex renovations have been delayed, the installation of the equipment will be delayed until the Sandford Fleming Terminal is moved.

Meanwhile, work is ongoing by DEC and UTCC to plan out the production system. Ed West recently returned from two weeks of DEC provided systems training. UTCC is still awaiting language processor documentation from DEC.

Users wishing more information concerning the DEC System are invited to contact a Computing Co-ordinator, a Customer Services representative or the Services Manager.

Stan Yagi

UTCC INFORMATION OFFICE AND REFERENCE LIBRARY

The UTCC Information Office, located in Room 206 of the Engineering Annex (11 King's College Road) provides a centralized information service for all Centre users. Staff members in this area are able to help the new or novice user become acquainted with UTCC services by answering questions on how to gain access to the system (i.e., where to obtain a computer account), how, where and during what hours jobs may be submitted and where to obtain technical assistance. Inquiries dealing with all levels of computing are handled by this group with the intention of directing users to the best known sources of information whether it be people or publications.

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UTCC INFORMATION OFFICE cont'd

Another important part of the service is the wide range of computer-related material maintained and distributed by this office. The Reference Library includes conference proceedings, technical reports, catalogues, directories, textbooks, manuals, periodicals, journals and newsletters from other installations. Also available is a stock of such publications as the UTCC USERBOOK, a selection of the commonly requested IBM manuals, user guides for packages like SPSS, BMD, DATATEXT, SAS and MARK IV and other supplementary user aides many of which are available at no charge. Course instructors may make arrangements with the Information Office to have large quantities of manuals stocked for their students but, in this case, are requested to make sure to notify us at least six weeks in advance of the first class.

If you would like more specific information concerning the services provided by UTCC's Information Office, or if you would like to attend an overview presentation of our library collection, please call 978-4990 or drop in from 9AM - 5PM Monday to Friday. Extended hours are yet to be determined and will be announced at a later date.

Marg Doherty

UTCC PUBLICATIONS

The University of Toronto Computer Centre publishes a variety of documentation designed to describe and explain the services and facilities available to UTCC users. The following UTCC publications may be obtained from the UTCC Information Office located in the Engineering Annex room 206, from the Computing Co-ordinators and from the publication display racks located in some UTCC terminals.

COMPUTERNEWS

The Computer Centre's newsletter is a monthly publication available free of charge to all UTCC users. COMPUTERNEWS contains articles on a variety of topics of interest to our users.

USERBOOK

The USERBOOK is the official user's reference manual for all computing services available at UTCC. USERBOOK's modular design allows each subscriber to compile a reference manual customized to meet individual documentation needs. The USERBOOK is updated regularly and an update service is available to subscribers.

A GUIDE TO USERBOOK

This booklet contains an overview of USERBOOK with an explanation of USERBOOK modularity and the page numbering systems used. It also contains a list of the optional USERBOOK modules currently available with a brief summary of the contents of each module. It is recommended that users review this booklet before subscribing to USERBOOK.

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UTCC PUBLICATIONS cont'd

USERBOOK KWIC INDEX

The KWIC Index is a comprehensive Keyword Index for USERBOOK Section 3 - S/370-165-II Services. The Index references only base chapters, keywords are listed alphabetically along with the immediate context and the page number. The KWIC Index is available as a reference document only at the Information Office, Advising Office and at the UTCC batch terminals.

HOW TO SERIES

The HOW TO series of manuals is designed to assist users in the operation of the self-service equipment at UTCC. Each manual describes the basic techniques required to operate the equipment; step-by-step explanations are accompanied by examples and photographs. At present, the series contains three manuals. These are:

1. HOW TO USE
   - AN IBM 029 KEYPUNCH
   - AN IBM 2501 CARD READER
   - AN IBM 1403 LINE PRINTER

2. HOW TO USE
   - A REMCOM CARD READER
   - A REMCOM LINE PRINTER
   - A REMCOM TERMINAL STARTUP/ PROCEDURE
   - A REMCOM CARD PUNCH

3. HOW TO USE
   - AN IBM 029 KEYPUNCH DRUM

REFERENCE CARDS

Pocket-size reference cards describing ATS, TSO, SPEAKEASY, APL and the GPJS Job Statement are available to all users and can be obtained from the Information Office, publication display racks and all Computing Co-ordinators.

The UTCC Publications Group's objective is to provide accurate, up-to-date documentation which will facilitate the use of the Centre's products and services. In order to meet this objective, we require feedback from our readers. Users with suggestions, comments and criticism re UTCC documentation are invited to contact any member of the Publications Group in the Engineering Annex Building, Room 206, phone 978-2066.

Janet Campbell

CUSTOMER SERVICE IS BACK

Actually, we have been here all summer, but we would like to welcome back all of our customers who have been away. The Customer Service Group (formerly called Marketing Services) has been together for a number of years now and has undergone numerous changes. The basic purpose of our group has remained the same, however; that is, to provide a liaison between users (both inside and outside the University) and various groups within the Computer Centre.

This takes us into many interesting areas. One of these is determining feasibility and obtaining specifications for user applications to be implemented by the Programming Services Group. As one might expect, since the range of applications in a university environment is very wide we have become involved in many fascinating projects.

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CUSTOMER SERVICE IS BACK cont'd

Another area we are involved in is helping to generate interest within the user community in new software products and hardware features that the Computer Centre adopts. In this way, we become involved in most of the innovations that are happening at the Computer Centre. The new DEC system, for example, will provide us with a great opportunity to learn and to help our customers learn what time-sharing is all about.

Please contact us if you are interested in any of the services the Computer Centre has to offer. The current Customer Service Group consists of: Bill Foster (Supervisor - 978-6021), Ruth Borenstein (978-6355), Andre LaBreche (978-6375), and Kurtis Bishop (978-6133).

Kurtis Bishop

THE COMPUTING CO-ORDINATOR

"How do I obtain a Service Access Code and a High Speed Account Code?"
"This program worked perfectly last week but now it doesn't work at all. What's wrong?"
"What, or who, is WYLBUR and is it of any use to me?"
"I'd like to use the Gould plotter. Where can I find information about this?"
"I want to perform a statistical analysis of my data but I've never programmed before. Where should I start?"
"How do I set up a load module library?"

The person to contact for answers to these types of questions is a Computing Co-ordinator.

Computing Co-ordinators are situated at all UTCC terminal sites and are responsible for dealing with any enquiries regarding computing at the University of Toronto. Furthermore, if the Computing Co-ordinator cannot answer your question, he will seek the answer from the appropriate UTCC staff member. The Computing Co-ordinator is responsible for any referrals and follow-ups and acts in the interest of the user.

In addition to answering questions, Computing Co-ordinators oversee the operation of the terminals. Any suggestions that would improve our service to users would be appreciated.

The following is a list of the terminal locations and the Computing Co-ordinator responsible for each terminal.

Arts and Science Terminal
Room 2105
Sidney Smith Building
St. George Campus

Jill Reece
978-6509

Erindale College
Room 2039
Erindale Campus

Clem DiPlacido
828-5311

New Physics Terminal
Room 1202
Burton Tower
St. George Campus

Bob Chambers
978-8823

cont'd...

THE COMPUTING CO-ORDINATOR , cont'd

Sanford Fleming Terminal
Room 117
Sanford Fleming Buiding
St. George Campus

Mark Tapia
978-7109

Advisors
978-8599

Scarborough College
Room S630
Scarborough Campus

Ihor Prociuk
284-3173

The following personnel, provided by terminal sponsors, are available for operational assistance.

Faculty of Dentistry
Dentistry Building
St. George Campus

Bob Kazluskas

Faculty of Management Studies
Room 219
246 Bloor St. W.
St. George Campus

Paul Kirkley

Institute for Aerospace Studies
Room 162
Aerospace Studies Building
Dufferin Campus

David Tsay

Policy Analysis
Room 109
150 St. Geogrge St.
St. George Campus

George Ugray

Zoology Terminal
Room 109
Ramsey Wright Building
St. George Campus

John Kornatowski

UTCC's main function is to provide computing facilities for the University of Toronto. The Computing Co-ordinator is there to help faculty, staff and students make use of these facilities.

Ralph Lombardi

COMPUTING IN THE SIDNEY SMITH BUILDING

September is the beginning of a new term and we would like to provide our new and returning users with a description of the computing facilities that are available at AST and ASUT in the Sydney Smith building.

The Arts and Science Terminal (AST) is located in Room 2105. In an attempt to improve service to users, the Remcom terminal has been replaced by a new CDC Cyber 18-05 batch terminal. This terminal is connected to the IBM S/370-165-II and consists of a card reader and a line printer. Associated with this reconfiguration was the removal of the Univac verifier/interpreter/punch. Other facilities available are four IBM 2741 interactive terminals, eight keypunches, an extensive collection of manuals, work tables and card storage cabinets. The terminal is available on a self-serve basis to Service Access Code holders.

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COMPUTING IN SIDNEY SMITH cont'd

The Arts and Science Undergraduate Terminal (ASUT) in Room 1073 is available to users wishing to submit jobs to the High Speed Job Stream. ASUT's facilities consist of an IBM 2501 card reader and 1403 line printer, 31 keypunches and, in Room 1075, work tables and manuals. This terminal also operates on a self-serve basis.

The hours of operation at both AST and ASUT are 8:00 A.M. - 10:00 P.M., Monday to Friday, and 10:00 A.M. - 6:00 P.M. on Saturday and Sunday. Commencing September 19, programming advisors will be on hand in Room 2104 during the following hours: 9:00 A.M. - 7:00 P.M. Monday to Thursday; 9:00 A.M. - 5:00 P.M. on Friday and 12:00 P.M. - 6:00 P.M. Saturday and Sunday.

Operational and programming problems, general enquiries and suggestions may be referred to the Computing Co-ordinator, Room 2100 (978-6509) or to the Operator/Advisor, Garpul Singh in Room 2104.

Jill Reece

SENIOR LEVEL SOFTWARE ADVISING AT UTCC

UTCC tries to maintain a high level of technical expertise in its senior level program software advisors. These senior advisors, who back up the student advisors and the Computing Co-ordinators in various major software areas are available as consultants to the user as the need arises. In addition to acting as consultants in a particular software area, these senior advisors are usually responsible for the support of that software. Therefore, once a user has been referred to a senior advisor, he will continue to interface with only one person and is assured of expert assistance.

First, in the area of statistical packages, Dr. John Roth (phone 978-6878) is available for consultations. He can advise on SPSS, SAS, BMD, Datatext, Census information, various other statistical packages and on statistics in general.

Similarly, Mr. Ian Darwin (phone 978-7318) is available for high-level advising and consulting on interactive packages such as TSO, WYLBUR, QED, NSCRIPT and ATS.

Mr. Ernst Goetze (phone 978-6710) runs the UTCC DATATALK problem service and advises and consults on APL, one of the most popular problem solving languages used at UTCC.

Mr. John Bradley (phone 978-3995) and Herb Kugel are available for discussion of concordance problems. Mr. Kugel is also available for general advice on any utility - IBM or UTCC - currently in use at UTCC. Mr. Kugel's phone number is 978-7286.

Mr. Kin Fong (phone 978-4924) and Mr. Bradley may be contacted for advice on any IBM Source Language Processor - FORTRAN, PL/I, SORT/MERGE etc., Mr. Fong and Mr. Mark Tapia (phone 978-7109) advise users on the GOULD and CALCOMP graphics packages.

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SENIOR LEVEL SOFTWARE cont'd

In the area of numerical routines, Mr. Bob Chambers, the New Physics Terminal Co-ordinator (phone 978-8823) can prove very helpful in both advising and consulting.

So, if you have a complicated software problem or question, please don't hesitate to phone any of the specialists listed above and we'll do all we can to help. We're here to help you.

Herb Kugel

THE NEW PHYSICS TERMINAL

The New Physics Terminal (NPT) is situated in Room 1202 of the Burton Tower. Currently we have a Remcom batch terminal, 1 IBM 2741 interactive terminal, 7 keypunches, and 1 keypunch/interpreter. The terminal is operated almost totally on a self-serve basis and is open for business at all hours. Please note, however, that the New Physics Terminal is restricted to faculty, staff, and graduate student use.

Two improvements to the terminal are slated to occur in this school year. First, early in the Fall, accoustic baffles will be suspended from the ceiling to reduce the often excessive noise level. Secondly, in mid-January, the Remcom will be wheeled out and a new CDC Cyber 18-05 batch terminal installed in its place.

Any enquiries, programming problems, suggestions, beefs, or bouquets may be directed to the Computing Co-ordinator in Room 1203B (978-8823) Monday to Friday, 9:00 to 17:00 hours.

Bob Chambers

P.S. ... P.S. ... P.S. ... P.S.

WELCOME TO WILLIE

Programming Services wishes to welcome the Alumni Affairs Department to the UTCC user community.

The New Computerized Alumni Affairs System (nick-named Willie by the Alumni Records staff) was developed through close co-operation between the Alumni Affairs Department and UTCC Programming Services. The preliminary analysis of the project began in November 1975, when Bert Pinnington, Director of Alumni Affairs, formally authorized the go-ahead. During this phase, Programming Services investigated the Alumni Affairs Systems at both McGill and Queens Universities and drew up a budget for the University of Toronto project.

By July 1976, the analysis stage was completed, and by October the design of the new system was determined. At this stage the Project team increased to four full-time members and we began a massive programming effort. In all, Programming Services spent almost three person-years on the project, wrote over 12,000 lines of code, developed and gave over two weeks of courses, and wrote three hundred pages of user documentation.

The general functions of the Alumni System are:

1. To maintain up-to-date biographic, tracing, and giving information for 250,000 University of Toronto Alumni.

2. To produce numerous weekly, monthly and yearly Alumni Reports.

P.S. ... WELCOME cont'd

3. To produce, on an on-demand basis, mailing slips, telephone slips, labels and Mark IV reports for any selected subgroup of the file.

The System was officially implemented (within budget!) on July 1, 1977. Paul, Bob and Sally deserve special commendation for their tremendous work. Special thanks are due UTCC Operations as well, for without their co-operation the Alumni Affairs System could not be successfully run.

Looking back on the development of the system we feel a tremendous sense of accomplishment. The work was challenging, demanding, even fun and we enjoyed the close co-operation with the Alumni Records staff.

Looking ahead, we're more prepared than ever to meet challenges with an experienced, steady, ready, eager hand! So keep those application requests coming in!

Helen Peacock

WELCOME BACK SCARBOROUGH USERS

Ihor Prociuk (Computing Co-ordinator) and Bob Parry (Terminal Operator) would like to welcome back all vacationing users of the Scarborough College Computer Terminal. We would also like to welcome all new students to our campus. We hope that all of you had a pleasant and relaxing holiday. No doubt you are all eager to set about extending your intellectual horizons and striving for higher academic achievements.

The installation of new equipment in the computer terminal room, S-624, has created a lot more room and this should relieve some of the crowding problems. Users will particularly appreciate the removal of the annoying cable-protection floor ramps. Users printing documents created under ATS or WYLBUR can have their output routed to the upper- and lower-case TELETYPE 40 line printer. The UNIVAC on-line punch has been removed so that punched output will be produced downtown and delivered to the Scarborough terminal upon request. Also installed is a TAB keypunch for card verification, interpretation and general keypunching by all users.

So, if things get a bit hectic around registration time, take a break. Come up to the sixth floor and have a chat with Ihor or Bob. They will be happy to describe the new equipment to you as well as help you with any of your computer needs.

Ihor Prociuk and Bob Parry

WELCOME BACK TO ERINDALE

Imagine a world filled with lush green vegetation where wild animals co-exsist peacefully with man, where buildings complement their environment, where tennis courts are nestled in green fields surrounded by trees, where one can sun bathe or lunch al fresco, with only the sound of the wind blowing through the trees, to distract you. Is this a deserted remote tropical island in the south Pacific or possibly a secluded resort in northern Ontario? Perhaps Hamilton, Ontario? Ney! It is Erindale College, home of the Erindale Computer Centre.

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WELCOME BACK cont´d

The Computer Centre may not be as aesthetically pleasing in terms of greenery as its surroundings yet it provides ample space and cleanliness for users to work freely. Muriel Elles, our operator, keeps a watchful eye on the equipment in the Computer Centre and is always ready to lend a helping hand to users who are unsure of the equipment´s operation. Her room and phone number are included as part of an information table at the end of this article. The Computing Co-ordinator (yours truly) will be available throughout the year from 9am to 5pm for consultation, sympathy, or directions to the best hanging tree in the forest.

The Erindale Computer Centre and its parent, the University of Toronto Computer Centre (UTCC), have had installed or are in the process of installing new equipment and software. These additions are directed at increasing the efficiency of computing while at the same time decreasing its cost. The problems inherent in new equipment and software may cause both new and old users some difficulties. Any difficulties originating at Erindale will hopefully be kept to a minimum and resolved as quickly as possible by Muriel or myself.

The user community at Erindale has provided valuable directions for the Computer Centre through their advice and criticism. Muriel and I welcome any suggestions toward the betterment of our operations.

Bienvennue. Welcome Back.

Area	Room	Hours of Operation
Interactive room (9 Decwriters)	2045	9am-10pm *
Computer room	2040	9am-10pm *
Keypunch room	2039	24 hrs./day

* 9am-10pm Monday thru Thursday
9am-5pm Friday
12noon to 5pm Saturday

Name	Phone	Room
Muriel Elles	828-5339	2039A
Clem DiPlacido	828-5311	2043

Clem DiPlacido

WYLBUR WORDS

WYLBUR-TSO COMPARISON

Several users have expressed interest in a cost comparison of WYLBUR and TSO, so an informal study has been undertaken. This consists of running similar sessions on both systems and comparing the costs.

Future issues will contain more cost comparisons. A "Features" comparison could also be provided, if users expressed interest. The sessions quoted here are on file.

The first session consisted of allocating and registering a partitioned dataset (PDS), creating three members by doing simple edits on a small dataset; listing members, compressing, scratching a member, compressing again and finally scratching the entire PDS. On TSO, using the default region and the standard TSO EDIT command, the session cost was $1.88.

cont´d...

WYLBUR WORDS cont´d

On WYLBUR, a similar session cost $0.96 and the four batch jobs required to allocate, register and compress twice cost $0.64 including $0.09 for printing them, all at priority 6. Since the output from the batch jobs was retrieved and examined at the terminal before printing, the actual printout from the jobs would normally be purged. Hence, the comparable cost on WYLBUR is $1.51 ($0.96 + $0.64 - $0.09). The cost of the batch jobs could be reduced by using priority 4, an option the TSO user does not have.

Session 2 consisted of submitting a very simple FORTRAN program with errors, retrieving the output, correcting the program and resubmitting. The TSO session cost $3.74 for 44 minutes. System response was slow and an ENQ (user´s fault) added to the connect time. The WYLBUR session cost $1.34 for 20 minutes. (The elapsed time difference accounts for less than $1.00 and TSO generally gives slower response). The batch jobs cost $0.48 (+ $0.31 for printing) at priority 6 in both cases. The total WYLBUR cost is therefore $1.82 + printing and the total TSO cost is $4.42 + printing.

Actually, the cheapest solution was achieved under TSO by using the RUN option under EDIT, i.e. invoking the FORTRAN compiler in the foreground. The errors were corrected and job run for $1.48, with no batch charges. You are reminded that the program was very trivial and the same results may not apply to larger programs.

Users with questions regarding the sessions used in this article should contact John Roth at 978-6878.

John Roth

TAPE DENSITY AND UNITS

800 BPI Tape Users Please Note

The following job:

```
.
.
.
/*SETUP UNIT=2400,VOL=EXT=N1234
.
.
.
//INPUT DD DSN=BELCH,VOL=SER=N1234,UNIT=2400
.
.
```

worked
(a) a month ago
(b) last time I ran it
(c) last year
(d) none of the above

but now it
(a) works
(b) still doesn´t work
(c) doesn´t work and gives an unintelligible message such as
UNEXPECTED LOAD POINT or
INVALID LABEL

If you answered a, b or c to the first and c to the second question, all may not be as you suspect and the tape is probably written at 1600 BPI, not 800 BPI. The reason is as follows. Before the new tape drives were installed (see July 1977 issue of COMPUTERNEWS), UNIT=2400 caused the tape to be mounted on one of two 800/1600 BPI tape drives. The hardware automatically switched to 1600 BPI and the job ran without giving a warning. The new tape drives allocated to UNIT=2400 are single density and therefore the job fails with an obscure error message. How did your tape become 1600 BPI when you requested a labelled 800 BPI tape?

cont´d...

TAPE DENSITY AND UNITS cont´d

The same hardware which reads dual density also automatically writes the first file on a tape at the greater of the two densities, rewriting the label at the higher density, unless DCB=DEN=2 is specified when the first file is written. (All files after the first are written at the density of the first regardless of the DEN parameter). Thus 800 BPI tapes become 1600 BPI tapes. In a similar manner, 1600 BPI tapes can still become 6250 BPI tapes unless DEN=3 is specified when the first file is created. Users having questions concerning tape densities and units should contact their local Computing Co-ordinator or Herb Kugel at 978-7286.

P.S. Solution to above problem:
use UNIT=3400-3 and resubmit.

John Roth

WATFIVS ON HSJS

As announced in the April 1977 issue of COMPUTERNEWS, on September 1, 1977, the WATFIVS compiler will be the default WATFIV compiler on the High Speed Job Stream. Users using the $JOBW card will access the WATFIVS compiler. The most obvious difference between WATFIV and WATFIVS is the format of the $JOB card. The old $JOB card was fixed format. The new $JOB card is free format with the options separated by commas. The following $JOB card requests the maximums for time, lines and pages:

```
$JOBV ID='MAXIMUMS',T=3.00,P=10
```

The change from the fixed format to the free format job card is part of UTCC´s continuing effort to standardize the control cards for the various HSJS processors. With the new version of WATFIV, the following processors will accept a free format $JOB card: SNAP, SPSSQ, PL/C, SP/k, WATFIV, ASMG and UTILITY. With the exception of ASMG and UTILITY, all of the above processors accept a $INCLUDE card which allows users to include either program(s) or data from the High Speed Job Stream Source library.

Mark Tapia

HSJS SOURCE LIBRARY

With the change to WATFIVS, UTCC has combined the libraries for the following processors: SPSSQ, SNAP, PL/C, SP/k and WATFIV. Now users of all of these processors can use a $INCLUDE card to incorporate source statements or data cards into the input stream. Instructors can use this feature to produce a standard test deck to be used by the students in the course.

The following rules have been established to simplify the library updating facility:

1. member names to be added can be at most seven characters in length with the first character any letter A-Z and the remaining characters composed of digits (0...9) and/or letters.

cont´d...

HSJS SOURCE LIBRARY cont´d

2. members may remain in the library for at most six months. They may be renewed.

3. only Computing Co-ordinators can actually add members to the library.

If you want to add a member, contact your Computing Co-ordinator or Mark Tapia at 978-7109. Members can either be on cards or in an online dataset.

Mark Tapia

PERSONNEL CHANGES

Leaving the Centre this month is Giora Leb. Giora has returned to Israel after a two year period with the Centre. Good luck in your future endeavours.

Joining the Centre this month is Marnie Posnikoff who previously worked in the Payroll Office. Marnie has assumed the responsibilities of the Tape Librarian position which was previously filled by Sylvia May. Also joining the Centre this month is Jimmy Chu who has taken a programming position with the UTCC Accounting Office. Jimmy is a graduate of the University of Toronto´s Department of Industrial Engineering. Welcome aboard Marni and Jimmy!

Clara Silva

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

Bobillier, P.A.
  Simulation with GPSS and GPSS V, by P.A. Bobillier, B.C. Kahan and A.R. Probst.
Englewood Cliffs, N.J., Prentice-Hall, 1976.

Carson, John H.
  Minicomputers and microprocessors: a tutorial.
New York, IEEE, 1976.

Galey, J. Michael, ed.
  Microprogramming: a tutorial on the Queen Mary, May 1975, ed. by J.M. Galey and R.L. Kleir.
Sponsored by IEEE.

Kleene, Stephen Cole.
  Introduction to metamathematics.
Groningen, Wolters-Noordhoff, 1971.

Schuman, Stephen A., ed.
  New directions in algorithmic languages 1976.
Rocqencourt, France, IRIA, 1977.

What's New! in *APL* at the U of T

SHARP APL services at the U of Toronto have set the standard for interactive, general purpose computing at the U of T for over five years.

The *SHARP APL* system is a large scale, general purpose, interactive computing system of proven reliability and integrity, that offers services and facilities that are among the most advanced and comprehensive in *APL* computing available anywhere - and, at low cost.

Nor is *APL* at the U of T a purely local development. ll modern *APL* processors implement

- *APL*/360 plus *APL/SV* system functions and system variables
- Backing Storage System(external, file, storage)
- Function canonical representation and keyword or intrinsic primitives for workspace environment information and control

and

- Other features that serve to complement the basic concepts of *APL*, as well as to provide a better user interface to the host system environment.

APL services at the U of T will be further enhanced this year by the introduction of the DEC *APL-SF* processor, in the general purpose interactive computing environment of UTCC's recently purchased DEC 1060 computer.

In addition, in order to improve the transparency of the two *APL* processors with respect to *APL* features, UTCC is presently evaluating the feasibility of an upgrade to the *SHARP APL* processor in order to include the newer concepts of 'system functions' and 'system variables' in ⎕-name form, to be available in parallel with the familiar *SHARP APL* keyword primitive functions.

This year, we have a great deal to look forward to in *APL* computing; not the least among our recent enhancements is the addition of an *APL/FULL* print train and high quality *APL* workspace documentation facilities, for high-speed file printing and workspace listing in the unique *APL* character font.

In this article, we would like to briefly review the basic facilities and utility programs of the *SHARP APL* system. Additional information and assistance for any aspect of *APL* services at the U of T may be had by calling U of Toronto *DATATALK* at 978-6710, 9AM-6PM, Monday through Friday.

cont'd...

U of Toronto *SHARP APL*: Features and Services

1. *APL/360* ....Getting Started

SHARP APL is an implementation of IBM *APL/360*(level XM6) with numerous UTCC/IPSA enhancements and performance optimizations.

To learn *APL/360*, we recommend the APL/360-OS User's Manual(IBM GH20-0906). The manual is rather dry and thorough;for a more lucid introduction, you might want to try the *APL* tutorial, 43 *APLSPEAK*, and the exercises in 41 *APLCOURSE*, *TEACH* and *EASYDRILL*, to test your comprehension.

Numerous texts concerning the *APL* language and the many applications of the *APL* language in econometrics, business management, mathematics and engineering, probability and statistics, and systems design, have been published in recent years. A pamphlet, Guide to APL Literature, is now available at the UTCC Information Office.

2. *SHARP APL* Disk Files

SHARP APL disk files are implemented by the *SHARP APL* keyword file primitive, *FF*, and provide the user with a secure, comprehensive access to on-line disk storage.

The *SHARP APL* file primitive is documented in the *SHARP APL* File Subsystem Instruction Manual.

3. *SHARP APL* Keyword Primitive Functions

Δ*FMT*	for efficient numeric to character conversion, with decoration codes. Documented in the *SHARP APL* Report Formatting Manual.
Δ*FI*, Δ*VI*	for character to numeric conversion
Δ*WS*, Δ*FD*	for dynamic workspace environment control and information, canonical representation, and dynamic function erase, fix and lock.

These latter facilities are documented in the *SHARP APL* workspace, 1 *WSFNS*, and in the *SHARP APL CATALOG*.

4. UTCC/IPSA Enhancements to *APL/360*

UTCC enhancements to *APL/360* include *ARBOUT*, *QUIETLOAD*, *AUTOLOAD*, *CLEAROUT*, *WALKAWAY*, *COMEBACK*, *NOCLEAR*, *TABS*, *SETLINK*, *DELAY*, *SETFUZZ*, *KEYB* and *ORIGIN*. All of these facilities are documented in the *SHARP APL* workspace, 1 *WSFNS*.

cont´d...

XFR DATA TRANSFER UTILITY (Userbook Section 4.0), for the transfer of numeric and character data between *SHARP APL* files on the System 360/65 and the System 370/165-*II*.

HIGHSPEED FILEPRINT, for high-speed line printing of *SHARP APL* print files; the *SHARP APL* Fileprint facility is documented in the *SHARP APL* File Subsystem Instruction Manual, and in the workspace, 1 *FILEPRINT*.

U of Toronto *DATATALK*

No discussion of *APL* at the U of Toronto would be complete without a reference to *DATATALK*.

U of Toronto *DATATALK* is an *APL* based computer service offered by UTCC that solves problems -we do, arithmetic that you might have had to do on a desk calculator, linear least squares fits to experimental data, linear equations, descriptive statistics, numerical integration, function tabulation, t-tests, ... - and we try to provide the answer during telephone conversation whenever possible.

DATATALK services are free, there are no prerequisites to the use of *DATATALK* services, and *DATATALK* is available to anyone in the university community by calling 978-6710, 9AM-6PM, Monday through Friday.

For some further introduction to *DATATALK*, please refer to the article, *DATATALK*:putting *APL* to Work - for you!, in this month's Newsletter.

APL Information and Advisory Services

U of Toronto *DATATALK* is your nearest resource for *APL* programming advice and information on the programs supported by UTCC in the *APL* public library system.

Most of our work is done over the telephone, and we may be easily reached at 978--6710 throughout the day.

SHARP APL Public Library *CATALOG*

The *SHARP APL CATALOG* classifies and documents all the programs of the *SHARP APL* public libraries supported by UTCC.

For more details,

```
)LOAD 1 CATALOG
```

and type

```
CATALOGHOW
```

cont'd...

The *CATALOG* is available for reference at the UTCC Information Office, and from your local Terminal Coordinator. Individual copies of the entire *CATALOG* may be ordered by calling the Vperations upervisor at 978-7374 and, of course, copies of sections of the *CATALOG* may be privately printed on the *APL/FULL* print train by using the *OFFLINE* option.

SHARP APL HOTNEWS

The *SHARP APL HOTNEWS* facility is a collection of timely information and programming hints on the use and practise of *APL* programming at the U of Toronto, and on those aspects of *APL* at the U of T that may affect your use of the *APL* system.

To access the *HOTNEWS* facility,

```
      )LOAD 1 HOTNEWS
```

and type,

```
      DESCRIBE
```

for a description of how to use the functions available.

Current *HEADLINES* begin with,

```
53 11/06/77 TURNING OFF THE BELL, THE BELL, THE BELL, ...
52 17/05/77 LAW AND JUSTICE IN FLOATING POINT ARITHMETIC
51 04/05/77 WHAT'S THE INDEX ORIGIN?
50 21/04/77 NEW 102 PROBIT - DISCOVER THE QUANTAL ASSAY
49 20/04/77 NEW 4 DOCWS - HIGHSPEED AUTOMATIC WS DOCUMENTATION
          .
          .
          .
```

and many more.

Ernst Goetze

DATATALK: Putting *APL* to Work - for you!

The application that we'd like to tell you about here is not really a *DATATALK* application. Rather, the user who gave us this example just happened to call us first, and it just happened that we couldn't resist doing it.

On the other hand, if this note illustrates anything at all about *DATATALK*, then it illustrates that *DATATALK* is one of the best resources that users have for getting hold of the 'right' *APL* programs, quickly, to assist in their day to day work.

cont'd...

The problem had to do with collecting about 3000 books, each book identified with a six digit serial number of the form,

uu/tt/ss, where

ss = row number of stack of shelves
(there are 66 rows)

tt = shelf number in each stack
(each stack has 29 shelves)
and
uu = file number on the shelf
(each shelf held 14 files)

Our user believed that he could travel the library, guided by a list of six digit numbers, with a shopping cart that could hold about 50 books every trip. He intended to make up his lists in the evening and collect his books in the day.

Altogether, because the library was so huge, and because his lists of books were in an essentially random order, so that, in general, he would expect to travel 1/2 the length of the library to fetch each book, he estimated that it might take about two weeks to do the job.

Enter stage left - *DEUS EX MACHINA!*

With the following (insignificant) *APL SORT* program, he claims to have done the whole job in only three days, and, used up only one pair of sneakers doing it.

```
     COLLECT
LOCATION 1?
□:
     061125 090953 112510 050206 040463 081515
LOCATION 7?
□:
     030350 042711 032410 050421 032727 010546 021244
LOCATION 14?
□:
     040761 132103 050453
LOCATION 17?
□:
     0
READY FOR PRINT?


LOC1   13.21.03    LOC9   03.27.27
LOC2   05.02.06    LOC10  02.12.44
LOC3   03.24.10    LOC11  01.05.46
LOC4   11.25.10    LOC12  03.03.50
LOC5   04.27.11     LOC13  05.04.53
LOC6   08.15.15    LOC14  09.09.53
LOC7   05.04.21    LOC15  04.07.61
LOC8   06.11.25     LOC16  04.04.63
```

cont´d...

The program, *COLLECT*, has few merits except that it is easy to use, helps the user to keep track of the number of books that he has already entered (and, it also has a *PAUSE* mechanism that we have not shown here), and returns a printed list, organized by file/section/stack (uu/tt/ss), so that each trip is only one way in and one way out!

DATATALK supports *APL* at the U of Toronto. We solve problems every day, and help users to solve problems as well. Please call us, 978-6710, 9AM-6PM, Monday through Friday.

Ernst Goetze

UTCC SYSTEMS

SYSTEM/370 MODEL 165-II

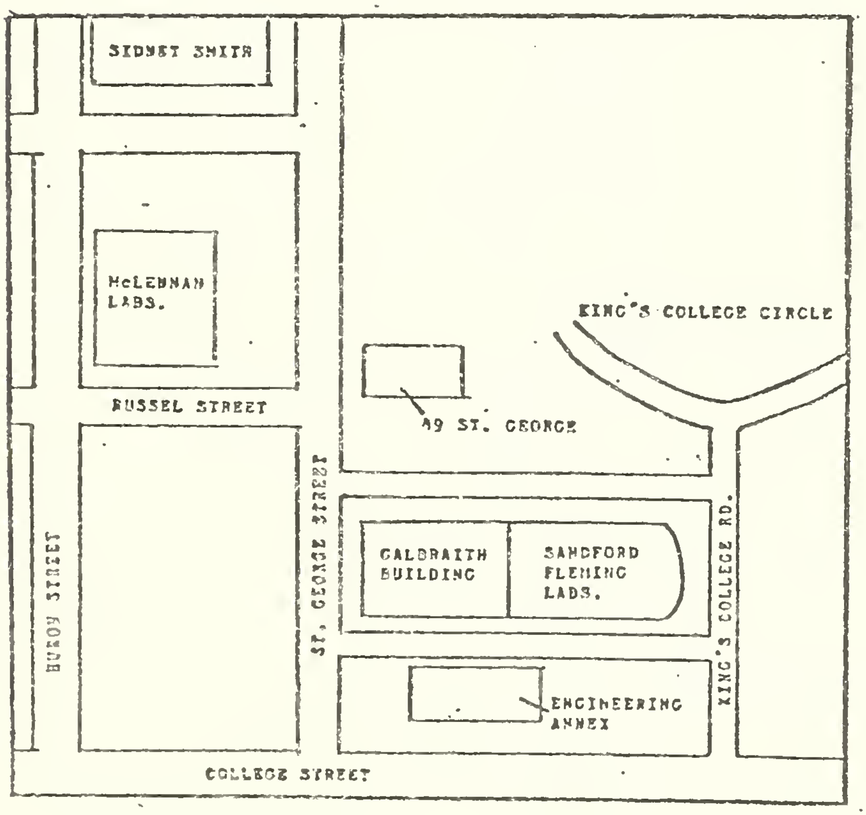
- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream, APL SV, TSO, WYLBUR
- 4 megabytes of memory
- OS/MVT with HASP

SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 1536K bytes of core
- OS/MVT with APL and ATS

COMPUTER RESEARCH FACILITY

- located in SF207
- DEC GT44 System with PDP-11/40 CPU
- DEC GT40 System with PDP-11/05CPU
- provides specialized graphics and interactive graphics
- provides on-line and real-time computing services, data acquisition and minicomputer services



UTCC DIRECTORY

ACTING DIRECTOR

Rein Mikkor	NP351	5058

INFORMATION OFFICE

General Inquiries	EA206	4990
Marg Doherty	EA206	8995

MANAGER, SERVICES

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INFORMATION SERVICES

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Scarborough		
Ihor Prociuk		284-3173
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New Physics		
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Dave Wong (S/370-155)		6864

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Merton Hunte	EA206	8702

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Sean Keeley		3579

NOTE:

EA = Engineering Annex
SF = Sandford Fleming
SG = 49 St. George
NP = McLennan Physical (New Physics)
SS = Sydney Smith

JOB AND SYSTEM STATUS QUERIES

SYSTEM/370,TSO	7373
ATS/APL	6234
2741 TERMINAL MALFUNCTIONS	7107
029 KEYPUNCH MALFUNCTIONS	6465

SERVICES

	DIAL-UP	ADVICE
APL - 2741	7200	6710
APL(ASCII)	7200	6710
APL SV - 2741	7239	6710
APL SV - TTY	7447	6710
ATS	7100	7107
TSO - 2741	7303	8599
TSO - TTY (10 cps)	7390	8599
TSO - TTY (30 cps)	7386	8599
DATATALK	6710	6710
WYLBUR	7235(EBCDIC) 3950(ASCII) CENTREX 3954(ASCII) NON CENTREX	8599

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COMPUTER CENTRE,
TORONTO, CANADA,